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PATENT
Atty. Dkt. No. PU020052

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: Shu Lin

Serial No.: 10/099,710

Confirmation No.: 2027

Filed: March 14, 2002

For: **TRICK MODE ON BIDIRECTIONAL
PREDICTIVE FRAMES**

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Group Art Unit: 2621

Examiner: James A. Fletcher

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APPEAL BRIEF

Dear Sir:

Appellant submits this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2621 dated February 15, 2007, finally rejecting claims 1-20.

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APPEAL BRIEF
Ser. No. 10/099,710

Real Party in Interest

The real party in interest is Thomson Licensing.

Related Appeals and Interferences

Appellant asserts that no other appeals or interferences are known to the Appellant, the Appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-20 were originally presented with the filed application. The Appellant's claims 1-2, 5, 8-12, 15 and 18-20 stand finally rejected under 35 U.S.C. § 102(b) as being anticipated by McLaren (WO96/13121). In addition, the Appellant's claims 3 and 13 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over McLaren in view of Metz et al. (US. Patent No. 5,978,855, hereinafter "Metz"). Even further, the Appellant's claims 4, 6-7, 14 and 16-17 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over McLaren and further in view of Takahashi et al. (US. Patent No. 5,841,939, hereinafter "Takahashi").

The claims on appeal are claims 1-20 as originally presented with the filed application. That is, the claims on appeal are the Appellant's claims 1-20, which are listed in the attached Claims Appendix.

Status of Amendments

A first response was filed on January 03, 2007 to overcome a First Office Action dated September 26, 2006. In the First Office Action, the Examiner rejected the Appellant's claims 1-2, 5, 8-12, 15 and 18-20 under 35 U.S.C. § 102(b) as being anticipated by McLaren (WO96/13121). The Examiner further rejected the Appellant's claims 3 and 13 under 35 U.S.C. § 103(a) as being unpatentable over McLaren in view of Metz et al. (US. Patent No. 5,978,855, hereinafter "Metz") and rejected the Appellant's claims 4, 6-7, 14 and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over McLaren further in view of Takahashi et al. (US. Patent No. 5,841,939, hereinafter "Takahashi"). In the response filed on January 03, 2007, the Appellant set forth arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

The Examiner responded to the Appellant's response of January 03, 2007 with a Final Office Action dated February 15, 2007. In the Final Office Action, the Examiner again rejected the Appellant's claims 1-2, 5, 8-12, 15 and 18-20 under 35 U.S.C. § 102(b) as being anticipated by McLaren and again rejected the Appellant's claims 3 and 13 under 35 U.S.C. § 103(a) as being unpatentable over McLaren in view of Metz and rejected the Appellant's claims 4, 6-7, 14 and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over McLaren further in view of Takahashi. In response to the Final Office Action dated February 15, 2007, the Appellant submitted a response dated July 10, 2007. In the response filed on July 10, 2007, the Appellant again set forth arguments traversing the rejections issued by the Examiner and distinguishing the Appellant's invention over the cited prior art.

The Examiner responded to the Appellant's response of July 10, 2007 with an Advisory Action dated July 26, 2007. In the Advisory Action, the Examiner stated that the Appellant's response to the Final Office Action did not place the Appellant's application in condition for allowance and the Examiner reiterated the rejection of the Appellant's claims 1-20. In response to the Advisory Action, the Appellant submitted a Notice of Appeal dated August 08, 2007.

Summary of Claimed Subject Matter

Embodiments of the Appellant's invention provide a method of performing a trick mode on a video signal. In one embodiment, the invention includes the steps of receiving a trick mode command, in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal in which the picture contains a display indicator, setting the display indicator of the picture being repeated to a predetermined value and setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value. In one arrangement of the invention, the trick mode can be a freeze trick mode, and the picture to be repeated can be a bidirectional predictive picture. In addition, the display indicator can be a temporal reference field having an integer value.

In an alternate embodiment, the method can further include the step transmitting at least a first reference picture and a second reference picture to predict the picture to be repeated in which each reference picture can contain a display indicator. In another embodiment, the method can further include the steps of setting the display indicator of the first reference picture to a predetermined value such that the predetermined value of the display indicator of the first reference picture can be lower than the predetermined value of the display indicators of the pictures being displayed during the trick mode and setting the display indicator of the second reference picture to a predetermined value such that the predetermined value of the display indicator of the second reference picture can be greater than the predetermined value of the display indicators of the pictures being displayed during the trick mode.

The Appellant further teaches that in another arrangement, each of the display indicators can be temporal reference fields having integer values. Also, the step of setting the display indicator of the second reference picture can include the step of setting the integer value of the temporal reference field of the second reference picture an integer value higher than the integer value of the temporal reference field of the picture being repeatedly displayed during the trick mode to maintain a proper display order. Moreover, at least a portion of the trick mode video signal can be decoded by a remote decoder.

The Appellant further teaches that an embodiment of the invention includes a system for performing a trick mode on a video signal. The system can include a controller for reading data from a storage medium and outputting the video signal and a processor programmed to receive a trick mode command; in response to the trick mode command, repeat a picture in the video signal to form a trick mode video signal in which the picture contains a display indicator, set the display indicator of the picture being repeated to a predetermined value and set the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value. The system can also further include suitable software and circuitry to implement the methods as described above.

As suggested in MPEP 1206, the Appellant now reads at least two of the broadest appealed claims on the specification and on the drawings. It should be understood, however, that the appealed claims may read on other portions of the specification or other figures that are not listed below.

The Appellant's Specification specifically refers to FIG. 1 for teaching a system 100 for implementing the various advanced operating features in accordance with the inventive arrangements. The Appellant teaches that such a system 100 can include a controller 110 for reading data from and writing data to a storage medium 112. The system 100 can also have a microprocessor 114 and a display device 118. The Appellant submits that it should be understood that all or portions of the controller 110 and the microprocessor 114 can be a bitstream source 120. The Appellant further teaches that control and data interfaces can also be provided for permitting the microprocessor 114 to control the operation of the controller 110 and other components in the bitstream source 120. In addition, suitable software or firmware can be provided in memory for the conventional operations performed by the microprocessor 114. Further, program routines can be provided for the microprocessor 114 in accordance with the inventive arrangements.

The Appellant teaches that in one embodiment of the invention, the display device 118 can contain its own decoder 116 for decoding all or a portion of any video signal read from the storage medium 112 and processed by the bitstream source 120. In this particular arrangement, the decoder (not shown) in the bitstream source 120 typically does not decode the video signal read from the storage medium 112. This particular embodiment can be referred to as a remote decoder arrangement,

and the decoder 116 in the display device 118 can be referred to as a remote decoder. The Appellant noted, however, that the invention is not limited to this arrangement, as the invention can be practiced with other suitable systems. In operation, the controller 110 can read a video signal containing a plurality of digitally encoded pictures from the storage medium 112. In one arrangement, if the microprocessor 114 receives a trick mode command, then the microprocessor 114 can repeatedly transmit a picture in the video signal to the decoder 116 thereby forming a trick mode video signal. The microprocessor 114 can execute the repeating step by transmitting repeats or duplicates of the picture to be repeated. These duplicates of the picture to be repeated during the trick mode can be referred to as subsequent repeated pictures. In one aspect of the invention, the picture to be repeated can be a bidirectional predictive (B) picture, and the trick mode can be a freeze trick mode.

It is taught in the Specification that during the trick mode, the picture being repeated can be repeatedly displayed (through the use of the subsequent repeated pictures) at the display device 118. In addition, this picture and the subsequent repeated pictures can include a display indicator, which is typically used to enable the decoder 116 to determine when a picture is to be displayed, at least relative to other pictures in a video signal. In one arrangement, the microprocessor 114 can set the display indicator of the picture to be repeated and the subsequent repeated pictures to a predetermined value to reflect an intended display order. This predetermined value of the display indicator of the picture being repeated can be the same as the predetermined value of the display indicators of the subsequent repeated pictures. In addition, the microprocessor can set to a predetermined value the display indicators of any reference frames that may be used to predict the picture to be repeated during the trick mode.

With reference to FIGs 2 and 3, the Appellant teaches an embodiment of performing a trick mode on a video signal in accordance with the Appellant's invention. More specifically, the Appellant teaches that at step 210, a trick mode command can be received. The Appellant further teaches that in one arrangement, the trick mode command can be a freeze or pause trick mode command. For purposes of the invention, a freeze trick mode can be a trick

mode in which a particular picture in the video signal can be repeatedly displayed on a display device for an amount of time determined by a viewer. The Appellant explains that although the invention is discussed primarily in terms of a freeze trick mode, it should be noted that the invention can be practiced with any other suitable trick mode.

Once the trick mode command is received, at step 212, a picture in the video signal can be repeated to form a trick mode video signal. As noted earlier, the Appellant teaches that the picture to be repeated can be a B picture, and the repeats or duplicates of this picture can be referred to as subsequent repeated pictures. In addition, the picture to be repeated and the subsequent repeated pictures can include a display indicator. It is understood, however, that the picture to be repeated is not limited to a B picture, as other suitable picture types can be used with the invention.

At step 214, the display indicator of the picture to be repeated can be set to a predetermined value. At step 216, the display indicators of subsequent repeated pictures of the picture being repeated can also be set to this predetermined value. As such, the value of the display indicator for each of the pictures to be displayed during the trick mode can be the same. The display indicator can be a temporal reference field. A temporal reference field is typically a ten bit field located in the picture header of digitally encoded pictures. This field normally has an integer value, and some decoders rely on this value to determine when a picture is to be displayed. The Appellant teaches, however, that the invention is not limited in this regard, as other suitable display indicators can be used to reflect an intended display order.

The Appellant refers to FIG. 3 for teaching an example of the process described in steps 212 – 216. Referring to FIG. 3, the Appellant teaches that a typical group of pictures (GOP) structure 300 in display order is shown. The GOP can include B pictures, predictive (P) pictures and intra (I) pictures. The subscript numbers represent integer values of each picture's temporal reference field and can indicate when a particular picture will be displayed relative to the

other pictures in the GOP, at least during normal playback. For instance, the first picture in the GOP, B₀, will be displayed first followed by B₁, I₂ and so on.

The Appellant further teaches that when transmitting a B picture for decoding and display, the two reference pictures from which the B picture is predicted must be sent to the decoder and decoded before the B picture. Once the reference pictures are decoded, the B picture can be decoded, and the pictures are displayed according to their display order, which can be obtained from the integer values of the temporal reference fields. As an example, if the reference pictures are P pictures P₅ and P₈ and the B picture B₆ is to be decoded and displayed, then P₅ and P₈ are decoded first followed by B₆; however, the display order is as follows: P₅, B₆ and P₈ (for convenience, this example ignores picture B₇).

Continuing with this example, the Appellant teaches that to reflect the intended display order, the integer value of the temporal reference field of picture P₅ can be set to a predetermined value of 5, the integer value of the temporal reference field of picture B₆ can be set to 6 and the integer value of the temporal reference field of picture P₈ can be set to 8. As the reference pictures are transmitted to the decoder and decoded prior to picture B₆, however, the value of the temporal reference fields of the reference pictures are set before the value of the temporal reference field of picture B₆. Such a process can be problematic if a freeze trick mode is to be performed on picture B₆ (or any other B picture for that matter). Specifically, as picture B₆ is repeated, the value of the temporal reference fields of each of the subsequent repeated pictures is set to reflect their intended display order. Thus, the value of the temporal reference fields of subsequent repeated pictures of picture B₆ are incrementally increased during the freeze trick mode. As noted earlier, however, the integer value of the temporal reference field of reference picture P₈ will remain the same, and once the freeze trick mode is stopped, picture P₈ may be displayed out of order as the decoder, particularly if it is remotely located, is unaware that a trick mode has been initiated.

The Appellant further teaches that in accordance with the inventive arrangements, the integer value of picture B₆ can be set to 6, and the integer values of the temporal reference fields of subsequent repeated pictures of picture B₆ can also be set to a value of 6. Thus, referring back to flowchart 200, when the freeze trick mode is stopped at step 218, the second reference picture, P₆, can be displayed in its proper order. The Appellant notes that the foregoing discussion is merely one example of how the invention can be practiced and that other GOP structures and other pictures can be used with the invention.

For the convenience of the Board of Patent Appeals and Interferences, the Appellant's pending claims are presented below in claim format with elements read on the drawings and appropriate citations to at least one portion of the specification for each element of the appealed claims (with reference numerals added).

Claim 1 positively recites (with reference numerals added, where applicable):

1. A method (200) of performing a trick mode on a video signal, comprising the steps of:
 - receiving (210) a trick mode command;
 - in response to the trick mode command, repeating (212) a picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator;
 - setting (214) the display indicator of the picture being repeated to a predetermined value; and
 - setting (216) the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value. (See Appellant's specification, page 8, line 8 through page 9, line 20).

Claim 2 positively recites:

2. The method according to claim 1, comprising the step of executing a freeze trick mode. (See Appellant's specification, page 8, lines 20-21).

Claim 3 positively recites:

3. The method according to claim 1, comprising the step of repeating a bidirectional predictive picture. (See Appellant's specification, page 3, lines 8-10 and page 7, lines 13-15).

Claim 4 positively recites:

4. The method according to claim 1, comprising the step of setting the display indicator as a temporal reference field having an integer value. (See Appellant's specification, page 9, lines 15-18).

Claim 5 positively recites:

5. The method according to claim 1, further comprising the step of transmitting at least a first reference picture and a second reference picture to predict the picture to be repeated, wherein each reference picture contains a display indicator. (See Appellant's specification, page 10, lines 8-16).

Claim 6 positively recites:

6. The method according to claim 5, further comprising the steps of:

setting the display indicator of the first reference picture to a predetermined value such that the predetermined value of the display indicator of the first reference picture is lower than the predetermined value of the display indicator of the picture being repeatedly displayed during the trick mode; and

setting the display indicator of the second reference picture to a predetermined value such that the predetermined value of the display indicator of the second reference picture is greater than the predetermined value of the display indicator of the picture being repeatedly displayed during the trick mode. (See Appellant's specification, page 3, lines 15-23 and page 10, line 8 through page 11, line 15).

Claim 7 positively recites:

7. The method according to claim 6, comprising the step of setting each of the display indicators as temporal reference fields having integer values; and, wherein said step of setting the display indicator of the second reference picture further comprises the step of setting the integer value of the temporal reference field of the second reference picture an integer value higher than the integer value of the temporal reference field of the picture being repeatedly displayed during the trick mode to maintain a proper display order. (See Appellant's specification, page 4, lines 2-6 and page 10, lines 17-23 and page 11, lines 14-16).

Claim 8 positively recites:

8. The method according to claim 1, further comprising the step of decoding at least a portion of the trick mode video signal at a remote location. (See Appellant's specification, page 6, line 20 through page 7, line 3 and page 8, lines 9-17).

Claim 9 positively recites:

9. A method (200) of performing a trick mode on a video signal, comprising the steps of:
receiving (210) a freeze trick mode command;
in response to the freeze trick mode command, repeating (212) a bidirectional predictive picture in the video signal to form a trick mode video signal, wherein the bidirectional predictive picture contains a display indicator;
setting (214) the display indicator of the bidirectional predictive picture being repeated to a predetermined value; and
setting (216) the display indicators of subsequent repeated bidirectional predictive pictures of the bidirectional predictive picture being repeated to the predetermined value. (See Appellant's specification, page 8, line 8 through page 9, line 20).

Claim 10 positively recites:

10. The method according to claim 9, comprising the steps of implementing the receiving, repeating and both setting steps at a first location and decoding at least a portion of the trick mode video signal at a second location. (See Appellant's specification, page 6, line 20 through page 7, line 3 and page 8, lines 9-17).

Claim 11 positively recites:

11. A system (100) for performing a trick mode on a video signal, comprising:
a controller (110) for reading data from a storage medium (112) and outputting the video signal; and
a processor (114) programmed to:
receive (210) a trick mode command;
in response to the trick mode command, repeat (212) a picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator;
set (214) the display indicator of the picture being repeated to a predetermined value; and

set (216) the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value. (See Appellant's specification, page 6, line 2 through page 8, line 6 and page 8, line 8 through page 9, line 20).

Claim 12 positively recites:

12. The system according to claim 11, wherein the trick mode is a freeze trick mode. (See Appellant's specification, page 7, lines 13-15).

Claim 13 positively recites:

13. The system according to claim 11, wherein the picture to be repeated is a bidirectional predictive picture. (See Appellant's specification, page 3, lines 8-10 and page 7, lines 13-15).

Claim 14 positively recites:

14. The system according to claim 11, wherein the display indicator is a temporal reference field having an integer value. (See Appellant's specification, page 9, lines 15-18).

Claim 15 positively recites:

15. The system according to claim 11, wherein the processor is further programmed to transmit at least a first reference picture and a second reference picture to predict the picture to be repeated, wherein each reference picture contains a display indicator. (See Appellant's specification, page 10, lines 8-16).

Claim 16 positively recites:

16. The system according to claim 15, wherein the processor is further programmed to:

set the display indicator of the first reference picture to a predetermined value such that the predetermined value of the display indicator of the first reference picture is lower than the predetermined value of the display indicator of the picture being repeatedly displayed during the trick mode; and

set the display indicator of the second reference picture to a predetermined value such that the predetermined value of the display indicator of the second reference picture is greater than the predetermined value of the display indicator of the picture being repeatedly displayed

during the trick mode. (See Appellant's specification, page 3, lines 15-23 and page 10, line 8 through page 11, line 15).

Claim 17 positively recites:

17. The system according to claim 16, wherein each of the display indicators are temporal reference fields having integer values and the processor is further programmed to perform the step of setting the display indicator of the second reference picture by setting the integer value of the temporal reference field of the second reference picture an integer value higher than the integer value of the temporal reference field of the picture being repeatedly displayed during the trick mode to maintain a proper display order. (See Appellant's specification, page 4, lines 2-6 and page 10, lines 17-23 and page 11, lines 14-16).

Claim 18 positively recites:

18. The system according to claim 11, wherein at least a portion of the trick mode video signal is decoded by a remote decoder. (See Appellant's specification, page 6, line 20 through page 7, line 3 and page 8, lines 9-17).

Claim 19 positively recites:

19. A system (100) for performing a trick mode on a video signal, comprising:
a controller (110) for reading data from a storage medium (112) and outputting the video signal; and
a processor (114) programmed to:
receive (210) a freeze trick mode command;
in response to the freeze trick mode command, repeat (212) a bidirectional predictive picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator;
set (214) the display indicator of the bidirectional predictive picture being repeated to a predetermined value; and
set (216) the display indicators of subsequent repeated bidirectional predictive pictures of the bidirectional predictive picture being repeated to the predetermined value. (See Appellant's specification, page 6, line 2 through page 8, line 6 and page 8, line 8 through page 9, line 20).

Claim 20 positively recites:

20. The system according to claim 19, further comprising a remote decoder for decoding at least a portion of the trick mode video signal. (See Appellant's specification, page 7, lines 1-2).

Grounds of Rejections to be Reviewed on Appeal

1. Whether the Appellant's claims 1-2, 5, 8-12, 15 and 18-20 are patentable under 35 U.S.C. § 102(b) over McLaren (WO96/13121).
2. Whether the Appellant's claims 3 and 13 are patentable under 35 U.S.C. § 103(a) over McLaren in view of Metz et al. (US. Patent No. 5,978,855, hereinafter "Metz").
3. Whether the Appellant's claims 4, 6-7, 14 and 16-17 are patentable under 35 U.S.C. § 103(a) over McLaren in view of Takahashi et al. (US. Patent No. 5,841,939, hereinafter "Takahashi").
4. Pending claims 1-2, 5, 8-12, 15 and 18-20 and 3 and 13 have been grouped together, respectively, by the Examiner in their rejection. Appellant urges that each of the rejected claims stands on its own recitation, the claims being considered to be separately patentable for the reasons set forth in more detail *infra*.

ARGUMENT

I. THE EXAMINER ERRED IN REJECTING CLAIMS 1-2, 5, 8-12, 15 AND 18-20 UNDER 35 U.S.C. § 102 BECAUSE THE CITED REFERENCE FAILS TO ANTICIPATE AT LEAST A METHOD AND SYSTEM FOR PERFORMING TRICK MODE ON A VIDEO SIGNAL INCLUDING AT LEAST “IN RESPONSE TO THE TRICK MODE COMMAND, REPEATING A PICTURE IN THE VIDEO SIGNAL TO FORM A TRICK MODE VIDEO SIGNAL”, “SETTING THE DISPLAY INDICATOR OF THE PICTURE BEING REPEATED TO A PREDETERMINED VALUE” AND “SETTING THE DISPLAY INDICATORS OF SUBSEQUENT REPEATED PICTURES OF THE PICTURE BEING REPEATED TO THE PREDETERMINED VALUE”.

A. 35 U.S.C. § 102(b) - Claim 1

The Examiner rejected the Appellant's claims 1-2, 5, 8-12, 15 and 18-20 under 35 U.S.C. § 102(b) as being anticipated by McLaren (WO96/13121). The rejection is respectfully traversed.

The Examiner alleges that regarding claim 1, McLaren discloses a method for performing a trick mode including all of the aspects of the Appellant's invention. The Appellant respectfully disagrees.

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim” (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1983)). (emphasis added). The Appellant respectfully submits that McLaren absolutely fails to teach each and every element of at least the Appellant's claim 1, which specifically recites:

“A method of performing a trick mode on a video signal, comprising the steps of:

receiving a trick mode command;

in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator;

setting the display indicator of the picture being repeated to a predetermined value; and

setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value." (emphasis added).

In the invention of the Appellant, at least with respect to claim 1, in response to a trick mode command, a picture in the original video signal is repeated to form a trick mode video signal. In support of at least claim 1, the Appellant in the Specification specifically recites:

"In operation, the controller 110 can read a video signal containing a plurality of digitally encoded pictures from the storage medium 112. In one arrangement, **if the microprocessor 114 receives a trick mode command, then the microprocessor 114 can repeatedly transmit a picture in the video signal to the decoder 116 thereby forming a trick mode video signal.** The microprocessor 114 can execute the repeating step by transmitting repeats or duplicates of the picture to be repeated. These duplicates of the picture to be repeated during the trick mode can be referred to as subsequent repeated pictures." (See Specification, page 7, lines 6-13). (emphasis added).

The Appellant respectfully submits that McLaren absolutely fails to teach, suggest, disclose or anticipate each and every element of the claimed invention, arranged as in at least the Appellant's independent claim 1. More specifically, the Appellant respectfully submits that there is absolutely no teaching, suggestion or disclosure in McLaren for a method, and systems for performing a trick mode on a video signal including at least **"repeating a picture in the video signal to form a trick mode video signal"** as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1.

In contrast to the invention of the Appellant, McLaren teaches a method for generating an MPEG compatible digital image representative signal for recording which facilitates reproduction at more than one speed. In McLaren, a low-resolution TP I-frame assembled in an I frame memory is coupled to three trick-play stream generation stages; 5 times, block; 18 times, block and 35 times block. In the exemplary FIGURE 1 of McLaren, each trick-play stream may be allocated the same bit-rate and temporal resolution, which may represent a preferred configuration. However, not every reconstructed TP I-frame is used for each TP speed. For example, if the I-frame refresh rate in the original stream is once every fifteen frames (M=15) and the temporal resolution used by each trick-play stream is selected to be

three, i.e. the number of frame times between frame updates, then for 5 times speed; $(5x \text{ speed}) \cdot (3 \text{ framerepeats}) / (15 \text{ frame refresh}) = 1.0$ thus every TP I-frame will be used. Similarly at 18x speed approximately every third or fourth I-frame is used, and at 35x speed every seventh I-frame is used. Specifically, McLaren teaches that trick modes are achieved by coupling a low-resolution TP I-frame assembled in I-frame memory to trick-play stream generation stages where the trick modes are achieved at predetermined speeds by only using specific I frames of a total number of I frames in the original video stream. However, McLaren absolutely fails to teach, suggest, disclose or anticipate a method, and systems for performing a trick mode on a video signal including at least **"repeating a picture in the video signal to form a trick mode video signal"** as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1.

It should be noted that McLaren further teaches that to minimize TP bit rate, in place of repeated TP I frames, frame repeats or holding times, may be implemented by writing empty P-frames between I frames in the video stream. That is, McLaren teaches that empty-P frames between I frames are repeated in the video stream to minimize a TP rate and not to form a trick mode signal as taught and claimed by the Appellant's invention. Therefore, the Appellant respectfully submits that McLaren does not teach, suggest or anticipate at least **"repeating a picture in the video signal to form a trick mode video signal"** as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1. As previously stated, in McLaren a trick mode video signal is formed by coupling a low-resolution TP I-frame assembled in I-frame memory to trick-play stream generation stages where the trick modes are achieved at predetermined speeds by only using specific I frames of a total number of I frames in the original video stream and not by repeating pictures in the original video stream.

As such and at least because McLaren fails to teach, suggest or anticipate at least a method and systems for performing a trick mode on a video signal including at least **"in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal"** as taught in the Appellant's Specification and claimed in at least the Appellant's independent claim 1, the Appellant respectfully submits that the teachings and disclosure of McLaren do not anticipate the Appellant's invention, at least with respect to claim 1.

Even further and to clarify, the Appellant submits that the invention of McLaren is directed to a digital video cassette recorder ("DVCR") for recording MPEG video. The DVCR receives an MPEG video signal and generates trick play I frames from I frames located in the MPEG video signal. These trick play I frames are grouped together to form trick play video signals of varying speeds, which are then recorded onto a tape together with the originally received MPEG video signal to facilitate non-standard replay speed. In particular, additional I frame data streams are generated specifically for each predetermined replay speed and are written within recorded tracks. For example, recorded tracks can be provided for 5X, 18X and 35X replay speeds. When a trick mode is initiated, one of the pre-recorded trick play video signals can be played back in place of the normal playback signal.

In contrast, the Appellant's invention is directed at least in part to a method of performing a trick mode on a video signal wherein a picture in the video signal is repeated in response to receiving a trick mode command. The picture contains a display indicator which enables a decoder to determine when a picture and repeated versions of the picture are to be displayed.

The Appellant's claim 1 recites and claims "setting the display indicator of the picture being repeated to a predetermined value". McLaren does not disclose, suggest or anticipate this technical feature of the Appellant's independent claims. In fact, such display indicators would not be required during trick mode playback as disclosed by McLaren because McLaren sequentially records pictures and uses the specific physical location of the pictures to determine the proper playback sequence.

The Appellant's claim 1 further recites "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value". This technical feature of the Appellant's independent claims insures that the repeated pictures are displayed in the proper temporal sequence with reference to other pictures in the video signal. Again, McLaren does not teach, suggest or disclose this technical feature of the Appellant's independent claims. The repeated pictures as disclosed by McLaren are generated well in advance of the receipt of a trick mode command and before the video signals are recorded to a storage medium. Since the trick play video signals in McLaren are generated prior to being recorded to a storage medium, the selection of different playback speeds that can be made available is limited, and only predetermined playback speeds are available.

The invention of the Appellant is not so limited. Accordingly, the trick mode playback speed is user adjustable and is not limited to a predetermined selection of playback speeds. In addition, although McLaren discloses the DSM_trick_mode_flag, it seems that in McLaren the DSM_trick_mode_flag is only used for implementing frame repeats and can not indicate the display order as is taught and claimed by the Appellant's independent claims and specifically by "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed by the Appellant's independent claims.

Further, McLaren specifically recites "[a]ssuming that the effective trick-play bit-rate is constant, the provision of higher temporal resolution would consequently require a lower spatial resolution quality." (See McLaren page 9, lines 7-9). Since the present invention does not require pre-recorded trick play video signals, there is no such tradeoff between temporal resolution and spatial resolution quality. In the invention of the Appellant, a picture can be repeated any number of times and at full image quality without increasing the amount of storage space required on the storage medium and without the requirement of increased bit-rate between the storage medium and a decoder.

Even further, the Appellant respectfully submits that there is absolutely no teaching, suggestion or disclosure in McLaren for a method, and systems for performing a trick mode on a video signal including at least **"in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal"** as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1.

In contrast to the invention of the Appellant and as described above, McLaren teaches a method and apparatus for generating an MPEG compatible digital image representative signal for recording which facilitates reproduction at more than one speed. In McLaren, a digital video cassette recorder ("DVCR") records MPEG video. The DVCR receives an MPEG video signal and generates trick play I frames from I frames located in the MPEG video signal. These trick play I frames are grouped together to form trick play video signals of varying speeds, which are then recorded onto a tape together with the originally received MPEG video signal to facilitate non-

standard replay speed. In particular, additional I frame data streams are generated specifically for each predetermined replay speed and are written within recorded tracks. For example, recorded tracks can be provided for 5X, 18X and 35X replay speeds. When a trick mode is initiated, one of the pre-recorded trick play video signals can be played back in place of the normal playback signal.

In contrast to McLaren, the Appellant's invention is directed at least in part to a method of performing a trick mode on a video signal wherein a picture in the video signal is repeated **in response to receiving a trick mode command**. That is, in the invention of the Appellant, a controller can read a video signal containing a plurality of digitally encoded pictures from a storage medium and in one embodiment, **if the microprocessor receives a trick mode command then the microprocessor can repeatedly transmit a picture in the video signal to the decoder thereby forming a trick mode video signal**. There is absolutely no teaching, suggestion or disclosure in McLaren for repeating a picture in the video signal to form a trick mode video signal **in response to receiving a trick mode command** as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1. As recited above, McLaren instead and in contrast to the invention of the Appellant, teaches that a pre-recorded trick play video signal can be played back in place of a normal playback signal during a trick play mode. That is, in McLaren trick play signals of various speeds are pre-recorded and a specific one of the pre-recorded signals are played to accomplish a requested trick play mode. However, in the invention of McLaren pictures in the video signal are not repeated to form a trick mode video signal **in response to receiving a trick mode command**. Even if, as argued by the Examiner, McLaren does in some respect teach repeating pictures to form a trick mode video signal (which the Appellant does not agree with the Examiner that McLaren does teach), McLaren absolutely fails to teach, suggest or disclose repeating pictures to form a trick mode video signal **in response to receiving a trick mode command** as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1.

As such, the Appellant submits that McLaren fails to teach each and every element of the Appellant's claimed invention, arranged as in at least the Appellant's independent claims and specifically claim 1 as required for anticipation.

Therefore, the Appellant submits that for at least the reasons recited above,

the Appellant's claim 1 is not anticipated by the teachings of McLaren, and, as such, claim 1 fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

B. 35 U.S.C. § 102(b) - Claim 2

Claim 2 depends directly from independent claim 1 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 2 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 1 further limited by "the step of executing a freeze trick mode" as recited in claim 2.

That is, and for at least the same reasons provided in Section A above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command**, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 2, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 2, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

C. 35 U.S.C. § 102(b) - Claim 5

Claim 5 depends directly from independent claim 1 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that

dependent claim 5 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 1 further limited by "the step of repeating a bidirectional predictive picture" as recited in claim 5.

That is, and for at least the same reasons provided in Section A above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least "**in response to the trick mode command**, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 5, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 5, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

D. 35 U.S.C. § 102(b) - Claim 8

Claim 8 depends directly from independent claim 1 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 1, the Appellant respectfully submits that dependent claim 8 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 1. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 1 further limited by "the step of decoding at least a portion of the trick mode video signal at a remote location" as recited in claim 8.

That is, and for at least the same reasons provided in Section A above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least "**in response**

to the trick mode command, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 8, which depends directly from independent claim 1.

Therefore, the Appellant submits that claim 8, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

E. 35 U.S.C. § 102(b) - Claim 9

Claim 9 is an independent claim that recites similar relevant features as recited in the Appellant's independent claim 1. More specifically, claim 9 claims a method of performing a trick mode on a video signal including "in response to the freeze trick mode command, repeating a bidirectional predictive picture in the video signal to form a trick mode video signal, wherein the bidirectional predictive picture contains a display indicator" and "setting the display indicator of the bidirectional predictive picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated bidirectional predictive pictures of the bidirectional predictive picture being repeated to the predetermined value".

As described in Section A above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command**, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claim 1 and as similarly claimed in the Appellant's independent claim 9, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in independent claim 9, which recites similar relevant features as recited in independent claim 1.

Therefore, the Appellant submits that claim 9, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

F. 35 U.S.C. § 102(b) - Claim 10

Claim 10 depends directly from independent claim 9 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 9, the Appellant respectfully submits that dependent claim 10 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 9. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 9 further limited by "the steps of implementing the receiving, repeating and both setting steps at a first location and decoding at least a portion of the trick mode video signal at a second location" as recited in claim 10.

That is, and for at least the same reasons provided in Sections A and E above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal"** and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 9, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 10, which depends directly from independent claim 9.

Therefore, the Appellant submits that claim 10, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

G. 35 U.S.C. § 102(b) - Claim 11

Claim 11 is an independent claim that recites similar relevant features as recited in the Appellant's independent claims 1 and 9. More specifically, claim 11 claims a system of performing a trick mode on a video signal including "a processor

programmed to" "in response to the trick mode command, repeat a picture in the video signal to form a trick mode video signal" and "set the display indicator of the picture being repeated to a predetermined value" and "set the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value".

As described in Sections A and E above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value"** as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1 and 9 and as similarly claimed in the Appellant's independent claim 11, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in independent claim 11, which recites similar relevant features as recited in independent claims 1 and 9.

Therefore, the Appellant submits that claim 11, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

H. 35 U.S.C. § 102(b) - Claim 12

Claim 12 depends directly from independent claim 11 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 11, the Appellant respectfully submits that dependent claim 12 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 11. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 11 further limited by "wherein the trick mode is a freeze trick mode" as recited in claim 12.

That is, and for at least the same reasons provided in Sections A, E and G above, at least because McLaren fails to teach, suggest or anticipate at least a

method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command**, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1, 9 and 11, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 12, which depends directly from independent claim 11.

Therefore, the Appellant submits that claim 12, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

I. 35 U.S.C. § 102(b) - Claim 15

Claim 15 depends directly from independent claim 11 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 11, the Appellant respectfully submits that dependent claim 15 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 11. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 11 further limited by "wherein the processor is further programmed to transmit at least a first reference picture and a second reference picture to predict the picture to be repeated, wherein each reference picture contains a display indicator" as recited in claim 15.

That is, and for at least the same reasons provided in Sections A, E and G above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command**, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's

claims 1, 9 and 11, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 15, which depends directly from independent claim 11.

Therefore, the Appellant submits that claim 15, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

J. 35 U.S.C. § 102(b) - Claim 18

Claim 18 depends directly from independent claim 11 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 11, the Appellant respectfully submits that dependent claim 18 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 11. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 11 further limited by "wherein at least a portion of the trick mode video signal is decoded by a remote decoder" as recited in claim 18.

That is, and for at least the same reasons provided in Sections A, E and G above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal"** and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1, 9 and 11, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 18, which depends directly from independent claim 11.

Therefore, the Appellant submits that claim 18, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

K. 35 U.S.C. § 102(b) - Claim 19

Claim 19 is an independent claim that recites similar relevant features as recited in the Appellant's independent claims 1, 9 and 11. More specifically, claim 19 claims a system of performing a trick mode on a video signal including "a processor programmed to" "In response to the freeze trick mode command, repeat a bidirectional predictive picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator" and "set the display indicator of the picture being repeated to a predetermined value" and "set the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value".

As described in Sections A, E and G above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal"** and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1, 9 and 11 and as similarly claimed in the Appellant's independent claim 19, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in independent claim 19, which recites similar relevant features as recited in independent claims 1, 9 and 11.

Therefore, the Appellant submits that claim 19, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

L. 35 U.S.C. § 102(b) - Claim 20

Claim 20 depends directly from independent claim 19 and recites further technical features thereof. At least because the teachings of McLaren absolutely fail to teach, suggest or anticipate the invention of the Appellant with regard to at least the Appellant's independent claim 19, the Appellant respectfully submits that dependent claim 20 is also not anticipated and is allowable for at least the reasons stated above with respect to independent claim 19. The Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claim 19

further limited by "a remote decoder for decoding at least a portion of the trick mode video signal" as recited in claim 20.

That is, and for at least the same reasons provided in Sections A, E, G and K above, at least because McLaren fails to teach, suggest or anticipate at least a method and system of performing a trick mode on a video signal including at least **"in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal"** and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed in at least the Appellant's claims 1, 9, 11 and 19, the Appellant respectfully submits that McLaren also fails to teach, suggest or anticipate the Appellant's invention as claimed in dependent claim 20, which depends directly from independent claim 19.

Therefore, the Appellant submits that claim 20, as it now stands, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

II. THE EXAMINER ERRED IN REJECTING CLAIMS 3 AND 13 UNDER 35 U.S.C. § 103 AT LEAST BECAUSE THE CITED REFERENCES FAIL TO MAKE OBVIOUS AT LEAST A METHOD AND SYSTEM FOR PERFORMING TRICK MODE ON A VIDEO SIGNAL INCLUDING AT LEAST “IN RESPONSE TO THE TRICK MODE COMMAND, REPEATING A PICTURE IN THE VIDEO SIGNAL TO FORM A TRICK MODE VIDEO SIGNAL”, “SETTING THE DISPLAY INDICATOR OF THE PICTURE BEING REPEATED TO A PREDETERMINED VALUE” AND “SETTING THE DISPLAY INDICATORS OF SUBSEQUENT REPEATED PICTURES OF THE PICTURE BEING REPEATED TO THE PREDETERMINED VALUE”.

A. 35 U.S.C. § 103(a) - Claims 3 and 13

The Examiner rejected the Appellant's claims 3 and 13 under 35 U.S.C. § 103(a) as being unpatentable over McLaren as applied to the claims above, and further in view of Metz et al. (US. Patent No. 5,978,855, hereinafter “Metz”). The rejection is respectfully traversed.

The Appellant respectfully submits that “To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art” (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). Moreover, “[i]f an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious” (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Claims 3 and 13 depend directly from the Appellant's independent claims 1 and 11, respectively, and thus, include all the elements of claims 1 and 11. With respect to claims 3 and 13, the Examiner applied the teachings of McLaren for the rejection of the Appellant's claims 3 and 13 as applied above for the rejections of the Appellant's independent claims 1 and 11. As recited above and for at least the reasons recited above and specifically that McLaren fails to teach, suggest or anticipate “in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal” and “setting the display indicator of the picture being repeated to a predetermined value” and “setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value” as taught in the Appellant's Specification and claimed by at least the

Appellant's claim 1 and claim 11, the Appellant respectfully submits that McLaren absolutely fails to teach, suggest or anticipate at least the Appellant's claims 1 and 11. As such, the Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claims 3 and 13, which depend directly from the Appellant's claims 1 and 11, respectively.

Furthermore, the Appellant respectfully submits that the teachings of Metz absolutely fail to bridge the substantial gap between the teachings of McLaren and the invention of the Appellant. More specifically, Metz teaches the downloading of applications software through a broadcast channel. In Metz, application software is downloaded and audio/video information is transmitted through one channel of a digital broadcast network. The network of Metz also provides two-way, low-speed data communications capacity, e.g. for signaling and/or interactive text services. Metz, however, absolutely fails to teach, suggest or make obvious "in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed by at least the Appellant's independent claims.

As such, the Appellant respectfully submits that McLaren and Metz, alone or in any allowable combination, fail to teach, suggest or make obvious a method and system for performing a trick mode on a video signal including "repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Appellant's Specification and claimed by at least the Appellant's claim 1 and claim 11. Therefore and for at least the reasons recited above, the Appellant respectfully submits that the teachings of McLaren and Metz, alone or in any allowable combination, fail to teach, suggest or make obvious the Appellant's claim 1 and claim 11 and as such, the Appellant's claims 3 and 13, which depend directly from the Appellant's claims 1 and 11 are also not rendered obvious.

Therefore, the Appellant submits that for at least the reasons recited above, the Appellant's claims 3 and 13 are not rendered obvious by the teachings of

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McLaren and Metz, alone or in any allowable combination, and, as such, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

III. THE EXAMINER ERRED IN REJECTING CLAIMS 4, 6-7, 14 AND 16-17 UNDER 35 U.S.C. § 103 AT LEAST BECAUSE THE CITED REFERENCES FAIL TO MAKE OBVIOUS AT LEAST A METHOD AND SYSTEM FOR PERFORMING TRICK MODE ON A VIDEO SIGNAL INCLUDING AT LEAST “IN RESPONSE TO THE TRICK MODE COMMAND, REPEATING A PICTURE IN THE VIDEO SIGNAL TO FORM A TRICK MODE VIDEO SIGNAL”, “SETTING THE DISPLAY INDICATOR OF THE PICTURE BEING REPEATED TO A PREDETERMINED VALUE” AND “SETTING THE DISPLAY INDICATORS OF SUBSEQUENT REPEATED PICTURES OF THE PICTURE BEING REPEATED TO THE PREDETERMINED VALUE”.

A. 35 U.S.C. § 103(a) - Claims 4, 6-7, 14 and 16-17

The Examiner rejected the Appellant's claims 4, 6-7, 14 and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over McLaren as applied to the claims above, and further in view of Takahashi et al. (US. Patent No. 5,841,939, hereinafter “Takahashi”). The rejection is respectfully traversed.

The Appellant respectfully submits that “To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art” (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). Moreover, “[i]f an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious” (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Claims 4, 6-7, 14 and 16-17 depend either directly or indirectly from the Appellant's independent claims 1 and 11, respectively, and thus, include all the elements of claims 1 and 11. With respect to claims 4, 6-7, 14 and 16-17, the Examiner applied the teachings of McLaren for the rejection of the Appellant's claims 4, 6-7, 14 and 16-17 as applied above for the rejections of the Appellant's independent claims 1 and 11. As recited above and for at least the reasons recited above and specifically that McLaren fails to teach, suggest or anticipate “in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal” and “setting the display indicator of the picture being repeated to a predetermined value” and “setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value” as taught in the

Appellant's Specification and claimed by at least the Appellant's claim 1 and claim 11, the Appellant respectfully submits that McLaren absolutely fails to teach, make obvious or anticipate at least the Appellant's claims 1 and 11. As such, the Appellant further submits that McLaren also fails to teach, suggest or anticipate the Appellant's claims 4, 6-7, 14 and 16-17, which depend either directly or indirectly from the Appellant's claims 1 and 11, respectively.

Furthermore, the Appellant respectfully submits that the teachings of Takahashi absolutely fail to bridge the substantial gap between the teachings of McLaren and the invention of the Appellant. More specifically, Takahashi teaches a picture reproduction apparatus which reproduces compressed image data which has been compressed using inter-frame encoding. The picture reproduction apparatus of Takahashi extracts a header from the reproduced image data, taking out intra-frame encoded image data using the information of the header. Invalid data is added to the image data other than the intra-frame encoded data. In Takahashi, the image data is output into a picture decoding apparatus, so as to obtain a reproduced video image during playback in fast forward and fast reverse. Alternatively, valid image data is detected from the reproduced image data.

The Applicant respectfully submits however, that Takahashi absolutely fails to teach, suggest or make obvious "in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Applicant's Specification and claimed by at least the Applicant's independent claims.

As such, the Applicant respectfully submits that McLaren and Takahashi, alone or in any allowable combination, fail to teach, suggest or make obvious a method and system for performing a trick mode on a video signal including "repeating a picture in the video signal to form a trick mode video signal" and "setting the display indicator of the picture being repeated to a predetermined value" and "setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1 and claim 11. Therefore and for at least the reasons recited above, the Applicant respectfully submits that the teachings of

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McLaren and Takahashi, alone or in any allowable combination, fail to teach, suggest or make obvious the Applicant's claim 1 and claim 11 and as such, the Applicant's claims 4, 6-7, 14 and 16-17, which depend either directly or indirectly from the Applicant's claims 1 and 11 are also not rendered obvious.

Therefore, the Applicant submits that for at least the reasons recited above, the Applicant's claims 4, 6-7, 14 and 16-17 are not rendered obvious by the teachings of McLaren and Takahashi, alone or in any allowable combination, and, as such, claims 4, 6-7, 14 and 16-17 fully satisfies the requirements of 35 U.S.C. § 103 and are patentable thereunder.

Conclusion

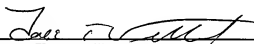
Thus, the Appellant submits that none of the claims presently in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Consequently, the Appellant believes all these claims are presently in condition for allowance.

For at least the reasons advanced above, the Appellant respectfully urges that the rejection of claims 1-2, 5, 8-12, 15 and 18-20 as being anticipated under 35 U.S.C. §102 and the rejection of claims 3 and 13 and 4, 6-7, 14 and 16-17 as being obvious under 35 U.S.C. §103 are improper. Reversal of the rejections in this Appeal is respectfully requested.

Respectfully submitted,

10/1/07

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CLAIMS APPENDIX

1. (Original) A method of performing a trick mode on a video signal, comprising the steps of:
 - receiving a trick mode command;
 - in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator;
 - setting the display indicator of the picture being repeated to a predetermined value; and
 - setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value.
2. (Original) The method according to claim 1, comprising the step of executing a freeze trick mode.
3. (Original) The method according to claim 1, comprising the step of repeating a bidirectional predictive picture.
4. (Original) The method according to claim 1, comprising the step of setting the display indicator as a temporal reference field having an integer value.
5. (Original) The method according to claim 1, further comprising the step of transmitting at least a first reference picture and a second reference picture to predict the picture to be repeated, wherein each reference picture contains a display indicator.
6. (Original) The method according to claim 5, further comprising the steps of:
 - setting the display indicator of the first reference picture to a predetermined value such that the predetermined value of the display indicator of the first reference picture is lower than the predetermined value of the display indicator of the picture being repeatedly displayed during the trick mode; and

setting the display indicator of the second reference picture to a predetermined value such that the predetermined value of the display indicator of the second reference picture is greater than the predetermined value of the display indicator of the picture being repeatedly displayed during the trick mode.

7. (Original) The method according to claim 6, comprising the step of setting each of the display indicators as temporal reference fields having integer values; and, wherein said step of setting the display indicator of the second reference picture further comprises the step of setting the integer value of the temporal reference field of the second reference picture an integer value higher than the integer value of the temporal reference field of the picture being repeatedly displayed during the trick mode to maintain a proper display order.

8. (Original) The method according to claim 1, further comprising the step of decoding at least a portion of the trick mode video signal at a remote location.

9. (Original) A method of performing a trick mode on a video signal, comprising the steps of:

receiving a freeze trick mode command;

in response to the freeze trick mode command, repeating a bidirectional predictive picture in the video signal to form a trick mode video signal, wherein the bidirectional predictive picture contains a display indicator;

setting the display indicator of the bidirectional predictive picture being repeated to a predetermined value; and

setting the display indicators of subsequent repeated bidirectional predictive pictures of the bidirectional predictive picture being repeated to the predetermined value.

10. (Original) The method according to claim 9, comprising the steps of implementing the receiving, repeating and both setting steps at a first location and decoding at least a portion of the trick mode video signal at a second location.

11. (Original) A system for performing a trick mode on a video signal, comprising:

a controller for reading data from a storage medium and outputting the video signal; and

a processor programmed to:

receive a trick mode command;

in response to the trick mode command, repeat a picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator;

set the display indicator of the picture being repeated to a predetermined value; and

set the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value.

12. (Original) The system according to claim 11, wherein the trick mode is a freeze trick mode.

13. (Original) The system according to claim 11, wherein the picture to be repeated is a bidirectional predictive picture.

14. (Original) The system according to claim 11, wherein the display indicator is a temporal reference field having an integer value.

15. (Original) The system according to claim 11, wherein the processor is further programmed to transmit at least a first reference picture and a second reference picture to predict the picture to be repeated, wherein each reference picture contains a display indicator.

16. (Original) The system according to claim 15, wherein the processor is further programmed to:

set the display indicator of the first reference picture to a predetermined value such that the predetermined value of the display indicator of the first reference picture is lower than the predetermined value of the display indicator of the picture being repeatedly displayed during the trick mode; and

set the display indicator of the second reference picture to a predetermined value such that the predetermined value of the display indicator of the second reference picture is greater than the predetermined value of the display indicator of the picture being repeatedly displayed during the trick mode.

17. (Original) The system according to claim 16, wherein each of the display indicators are temporal reference fields having integer values and the processor is further programmed to perform the step of setting the display indicator of the second reference picture by setting the integer value of the temporal reference field of the second reference picture an integer value higher than the integer value of the temporal reference field of the picture being repeatedly displayed during the trick mode to maintain a proper display order.

18. (Original) The system according to claim 11, wherein at least a portion of the trick mode video signal is decoded by a remote decoder.

19. (Original) A system for performing a trick mode on a video signal, comprising:
a controller for reading data from a storage medium and outputting the video signal; and
a processor programmed to:
receive a freeze trick mode command;
in response to the freeze trick mode command, repeat a bidirectional predictive picture in the video signal to form a trick mode video signal, wherein the picture contains a display indicator;
set the display indicator of the bidirectional predictive picture being repeated to a predetermined value; and
set the display indicators of subsequent repeated bidirectional predictive pictures of the bidirectional predictive picture being repeated to the predetermined value.

20. (Original) The system according to claim 19, further comprising a remote decoder for decoding at least a portion of the trick mode video signal.

EVIDENCE APPENDIX

Appellant asserts that there is no evidence to be submitted in accordance with this section.

RELATED PROCEEDINGS APPENDIX

Appellant asserts that there are no copies of decisions to be submitted in accordance with this section.